INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
*We make Indiana a cleaner, healthier place to live.*

*Frank O'Bannon*
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*Lori F. Kaplan*
Commissioner

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P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

June 9, 2003

TO: Interested Parties / Applicant

RE: ANR Pipeline Company - Shelbyville Compressor Sta. SSM 145-16668-00011

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

## Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within (18) eighteen days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) the date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for consideration at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosure

FNPER.wpd 8/21/02

June 9, 2003

Mr. Tracy Purcell
ANR Pipeline
277725 Stansbury Boulevard
Farmington Hills, MI 48334

Re: **145-16668-00011**
Significant Source Modification to:
Part 70 permit No.: T145-6240-00011

Dear Mr. Purcell:

ANR Pipeline Co. - Shelbyville Compressor Station, Indiana, was issued a Part 70 operating permit (T145-6240-00011) on October 8, 1998, for pipeline compressor station. An application to modify the source was received on January 15, 2003. Pursuant to 326 IAC 2-7-10.5, the following emission units are approved for construction and modification at the source:

(a) One (1) natural gas fueled 2 cycle lean burn reciprocating internal combustion engine compressor, installed in 1968, identified as ID # E08, with a rated capacity of 7830 Horsepower, and exhausting to stack # S08.

(b) One (1) natural gas fueled 2 cycle lean burn reciprocating internal combustion engine compressor, installed in 1970, identified as ID # E09, with a rated capacity of 11000 Horsepower, and exhausting to stack # S09.

A new electronic fuel injection system (valves and nozzles) is incorporated to the existing fuel injection of E08 and E09. The new electronic injection system, is designed to optimize in-cylinder mixing of air and natural gas fuel. The optimized mixing of the fuel and air is realized by injecting fuel gas into the combustion chamber at an increase pressure thus creating a more turbulent environment resulting in a homogeneous mixture. This homogeneous mixture results in a more complete combustion and eliminates fuel rich regions that disproportionately contribute to $NO_x$ formation and allows combustion to happen with a lean fuel/air mixture which raises the heat capacity of the mixture. Fuel lean operations result in lower $NO_x$ emissions because peak temperatures are reduced during the combustion process.

Lean denotes a paucity of fuel, or an excess of oxidant, (e.g. air). In this case, excess air serves primarily as thermal ballast, keeping the temperature from soaring to levels where rapid $NO_x$ formation occurs.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in

construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Revocation of the Permit
Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

6. Operation of the Units
Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

7. Pollution Control Project [326 IAC 2-2.5]

(a) The Permittee shall install combustion modification controls on E08 and E09 such that each engine does not emit more than the following rates:

| Pollutant | Emission Rate (lb/hr) | |
|---|---|---|
| | E08 | E09 |
| CO | 46.61 | 65.48 |
| NOx | 113.93 | 194.00 |

(b) Pursuant to 326 IAC 2-2.5, this combustion modification technology is considered a pollution control project (PCP), thus it is excluded from the 40 CFR 52.21 and 326 IAC 2-2 PSD requirements.

This significant source modification authorizes the modification of the 2 existing emission units. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. **Operation is not approved until the significant permit modification (145-16700-00011) has been issued.**

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, press 0 and ask for Iryn Calilung or extension 3-5692, or dial (317) 233-5692.

Sincerely,

Original signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

cc: File - Shelby County
Shelby County Health Department
Air Compliance Section Shelby County Inspector
Compliance Data Section
Technical Support and Modeling

# PART 70 SIGNIFICANT SOURCE MODIFICATION
# OFFICE OF AIR QUALITY

## ANR Pipeline Company
## 5500 Smithland Road
## Shelbyville, IN 46176

(herein known as the Permittee) is hereby authorized to modify subject to the conditions contained herein, the units described in Section D of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 and 326 IAC 2-1-3.2 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

| Significant Source Modification 145-16668-00011 | |
|---|---|
| Issued by: Original signed by Paul Dubenetzky<br><br>Paul Dubenetzky, Branch Chief<br>Office of Air Quality | Issuance Date: June 9, 2003 |

**SECTION D.1 FACILITY OPERATION CONDITIONS**

Facility Description [326 IAC 2-7-5(15)]
The information describing the process in this facility description box is descriptive information and does not constitute enforceable conditions.

(a) One (1) natural gas fueled 2 cycle lean burn reciprocating internal combustion engine compressor, installed in 1968, identified as ID # E08, with a rated capacity of 7830 Horsepower, and exhausting to stack # S08.

(b) One (1) natural gas fueled 2 cycle lean burn reciprocating internal combustion engine compressor, installed in 1970, identified as ID # E09, with a rated capacity of 11000 Horsepower, and exhausting to stack # S09.

A new electronic fuel injection system (valves and nozzles) is incorporated to the existing fuel injection of E08 and E09. The new electronic injection system, is designed to optimize in-cylinder mixing of air and natural gas fuel. The optimized mixing of the fuel and air is realized by injecting fuel gas into the combustion chamber at an increase pressure, thus creating a more turbulent environment resulting in a homogeneous mixture. This homogeneous mixture results in a more complete combustion and eliminates fuel rich regions that disproportionately contribute to $NO_x$ formation and allows combustion to happen with a lean fuel/air mixture which raises the heat capacity of the mixture. Fuel lean operations result in lower $NO_x$ emissions because peak temperatures are reduced during the combustion process.

Lean denotes a paucity of fuel, or an excess of oxidant, (e.g. air). In this case, excess air serves primarily as thermal ballast, keeping the temperature from soaring to levels where rapid $NO_x$ formation occurs.

**Emission Limitations and Standards [326 IAC 2-7-5(1)]**

D.1.1 General Operation

Any change or modification which may increase potential emissions from the equipment covered in this permit shall obtain prior approval from the Office of Air Quality (OAQ).

D.1.2 Pollution Control Project [326 IAC 2-2.5]

(a) The Permittee shall install combustion modification controls on E08 and E09 such that each engine does not emit more than the following rates:

| Pollutant | Emission Rate (lb/hr) | |
|---|---|---|
| | E08 | E09 |
| CO | 46.61 | 65.48 |
| NOx | 113.93 | 194.00 |

(b) Pursuant to 326 IAC 2-2.5, this combustion modification technology is considered a pollution control project (PCP), thus it is excluded from the 40 CFR 52.21 and 326 IAC 2-2 PSD requirements.

**Compliance Determination Requirements**

D.1.3 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance shall be determined by a performance test conducted in accordance with Section C - Performance Testing of the Part 70 permit 145-6240-00011.

# Indiana Department of Environmental Management
# Office of Air Quality

## Technical Support Document (TSD) for a Part 70 Significant Source Modification (SSM), Significant Permit Modification (SPM), Minor PSD Modification and Pollution Control Project (PCP)

### Source Background and Description

| | |
|---|---|
| Source Name: | ANR Pipeline Co. - Shelbyville Compressor Station |
| Source Location: | 5500 Smithland Road, Shelbyville, IN 46176 |
| Mailing Address: | El Paso Corp., 9 Greenway Plaza, Houston, TX 77046 |
| Source General Telephone Number: | 832-676-7466 |
| County: | Shelby |
| SIC Code: | 4922 (Transporting Natural Gas) |
| Source Categories: | Major PSD Source<br>Major Source, CAA Section 112 |
| Part 70 Operating Permit No.: | 145-6240-00011, issued October 8, 1998 |
| Significant Source Modification No.: | 145-16668-00011 |
| Significant Permit Modification No.: | 145-16700-00011 |
| Permit Reviewer: | Iryn Calilung |

### Proposed Modification

On October 8, 1998, the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) issued a Part 70 permit to ANR Pipeline Corp.(ANR) for their Shelbyville Compressor station, located at 5500 Smithland Road, Shelbyville, Indiana.

On January 15, 2003, the OAQ received an application from ANR to modify their Shelbyville Compressor Station. The modification is for the following two (2) units among the several permitted units in this source:

(a) One (1) natural gas fueled reciprocating internal combustion engine compressor, installed in 1968, identified as ID # E08, with a rated capacity of 7830 Horsepower, and exhausting to stack #S08.

(b) One (1) natural gas fueled reciprocating internal combustion engine compressor, installed in 1970, identified as ID # E09, with a rated capacity of 11000 Horsepower, and exhausting to stack # S09.

The main purpose of the proposed modification is to modify the existing fuel injection system of these 2 units, thus ANR can use the NOx emission reductions toward compliance with the NOx SIP call. At this time, there is no final call in effect for NOx reduction for internal combustion engines. ANR is making this modification as anticipation of future requirement.

The NOx reduction will be attained by the incorporation of a new electronic fuel injection system (valves and nozzles) to the existing fuel injection. The new electronic injection system, considered as an evolution of Low Emission Combustion (LEC) technology, is designed to optimize in-cylinder mixing of air and natural gas fuel. The optimized mixing of the fuel and air is realized by injecting fuel gas into the combustion chamber at an increase pressure, thus creating a more turbulent environment resulting in a homogeneous mixture. This homogeneous mixture results in a more complete combustion and eliminates fuel rich regions that disproportionately

contribute to NOx formation and allows combustion to happen with a lean fuel/air mixture which raises the heat capacity of the mixture. Fuel lean operations result in lower NOx emissions because peak temperatures are reduced during the combustion process.
Lean denotes a paucity of fuel, or an excess of oxidant, (e.g. air). In this case, excess air serves primarily as thermal ballast, keeping the temperature from soaring to levels where rapid $NO_x$ formation occurs.

The advantage of installing and using this combustion modification is that it prevents the formation of $NO_x$ emissions. This is more environmentally beneficial than installing and using add on controls designed to eliminate $NO_x$ emissions once it has been formed because it minimizes the formation from the beginning of the process.

In reducing the $NO_x$ short term emissions, CO short term emissions are expected to increase. The proposed modification will be evaluated as a Pollution Control Project (PCP), such that emission increase of CO and $NO_x$ above the PSD Significant levels will not be required to undergo major review. There are no expected increases in PTE for $PM_{10}$, $SO_2$ and VOC. Detailed PCP evaluation is shown in the subsequent pages.

This proposed modification can be accomplished with no new construction of emitting unit.

**Potential To Emit of Modification** (Unit 8 and Unit 9 Only)

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

**Table 1 - - PTE Before the PCP** (ton/yr)

| Pollutant | E08 | E09 | Total |
|---|---|---|---|
| CO | 281.7 | 395.74 | 677.44 |
| $NO_x$ | 924.92 | 1,299.38 | 2,224.3 |
| $PM_{10}$ | 13.31 | 18.69 | 32.0 |
| $SO_2$ | 0.32 | 0.46 | 0.78 |
| VOC | 70.10 | 98.48 | 168.58 |

This table summarizes the PTE of units E08 and E09. This information was taken from ANR’s Part 70 application.
The same information was used in the issuance of the Part 70 permit.
This information has been verified to be accurate and correct.
E08 maximum capacity is 53.6355 MMBTU/hr and E09 maximum capacity is 75.35 MMBTU/hr.

**Table 2 - - PTE After the PCP**

| Pollutant | Emission factor (lb/MMBTU) | E08 | | Emission Factor (lb/MMBTU) | E09 | | Total (ton/yr) |
|---|---|---|---|---|---|---|---|
| | | (lb/hr) | (ton/yr) | | (lb/hr) | (ton/yr) | |
| CO | 0.870 | 46.61 | 204.16 | 0.869 | 65.48 | 286.79 | 490.95 |
| $NO_x$ | 2.124 | 113.93 | 499.02 | 2.57 | 194.00 | 849.74 | 1,348.76 |
| $PM_{10}$ | - - | | 13.31 | - - | | 18.69 | 32.0 |
| $SO_2$ | - - | | 0.32 | - - | | 0.46 | 0.78 |
| VOC | - - | | 70.10 | - - | | 98.48 | 168.58 |

E08 maximum capacity is 53.6355 MMBTU/hr and E09 maximum capacity is 75.35 MMBTU/hr.
PTE = (EF lb/MMBTU)(Maximum capacity MMBTU/hr)(8760 hr/yr)(1 ton/2000 lb)
There is no expected increase in the PTE before and after the modification for $PM_{10}$, $SO_2$ and VOC.

**Table 3 - - Past Actual** (ton/yr)

| Pollutant | E 08 | | E09 | | Average (tons/year) |
|---|---|---|---|---|---|
| | 2000 | 2001 | 2000 | 2001 | |
| CO | 33.25 | 65.39 | 64.8 | 155.52 | 159.48 |
| $NO_X$ | 202.99 | 399.18 | 207.37 | 497.65 | 653.6 |
| $PM_{10}$ | 2.34 | 4.6 | 4.06 | 5.73 | 7.53 |
| $SO_2$ | 0.04 | 0.07 | 0.065 | 0.09 | 0.12 |
| VOC | 17.96 | 34.42 | 18.52 | 44.44 | 57.41 |

These actual emissions are taken from the IDEM, OAQ Emission Inventory database. They are the same information that ANR provided in the application for this proposed modification.

Based on the new federal NSR revisions published in December, 2002 by US EPA, the baseline in determining past actual emissions can be any 24-consecutive month period in a 10-year period before the proposed change. For this specific proposed modification, the 24- consecutive month period used are the most recent 24 months that data is available.

Average (tons/year) = 2000 plus 2001 actual emissions divide by 2.

In the same federal NSR revision, net environmental benefit can be determine by using the Projected Actual to Past Actual comparison.

At this time, it will be assumed that the anticipated or projected actual emission will be equal to the PTE of the modification. In doing this, the increase in actual emissions is conservatively estimated.

**Table 4 - - Increase Emission** (ton/yr)

| Pollutant | PTE-PTE | PTE-Past Actual |
|---|---|---|
| CO | - 186.49 | 331.37 |
| NOx | - 875.54 | 695.16 |
| PM10 | - - | 24.47 |
| SO2 | - - | 0.66 |
| VOC | - - | 111.17 |

Based on the comparison of the PTE before PCP to the PTE after PCP, there is a significant decrease in the CO and NOx emissions.

Based on the methodology of determining increase emissions of subtracting past actuals from the PTE after the PCP, the emission increase of CO, NOX, PM10 and VOC are greater than the PSD Significant levels.

Based on the recent NSR revisions (November 22, 2002), the net emissions increase can also be determine by using the Projected Actual minus the Past Actual methodology. In any scenarios, the proposed modification arrives at the same conclusion. In relying to the original PTE-Past actual determination, the applicant does not need to keep track for the next 5 to 10 years of the increase in actual emissions.

**Pollution Control Project (PCP) Exclusion**

This project is going to be evaluated as a PCP. A project that is considered a PCP is exempted from PSD major review and requirements even though the collateral emissions increase is greater than the PSD significant levels.

Pursuant to the existing federal rules in effect at this time, 40 CFR 52.21(b)(2)(iii)(h) and 40 CFR 52.21(b)(32), PCP definition and criteria do not apply to this proposed modification because existing rules are applicable to existing electric utility steam generating unit.

At this time, federal rules 40 CFR Part 52.21 and 40 CFR Part 51.166 do not have any provisions in effect for a PCP that is for a non-electric utility steam generating modification. However, on December 31, 2002, US EPA published a final rule, among other NSR revisions, an action to encouraged a streamlined permitting process for PCP. Based on this NSR revision, low emissions combustion for internal combustion (IC) engines is one of the listed environmentally beneficial PCP. It was also recommended that even though the PCP clearly indicates a control to be under PCP exclusion, the permitting agency may still perform the PCP exclusion evaluation. Since the NSR revision is not in effect yet and will not be in effect until after 60 days of its publication in the Federal Register, OAQ will continue with the usual evaluation if the proposed modification is a PCP.

Pursuant to the new federal NSR revision and 40 CFR 52.21(a)(32), low emissions combustion for IC engines is one of the presumed environmentally beneficial projects. Since the proposed project is already one of the presumed environmentally beneficial project, pursuant to the new federal NSR, the source simply submits a notice and may start construction of the project.

However, low emissions combustion for IC engine is not yet one of the listed presumed environmentally beneficial PCP in the state rule 326 IAC 2-2.5, thus a case by case determination has to be performed. Pursuant to 326 IAC 2-2.5-2(b)(1)(H), a proposed modification can be a PCP if it is a pollution prevention project that the IDEM has determined to be environmentally beneficial.

Table 6 shows the evaluations to determine if the proposed modification is a PCP according to the existing state rules.

| Table 5 - - PCP Evaluation | | |
|---|---|---|
| Rule 326 IAC | Criteria | Evaluations |
| 2-2.5-2(b) & 2-2.1-1(13) | PCP means an activity or project undertaken at an existing emission unit for the purposes of reducing emissions. | ANR is proposing to modify units E08 and E09 to minimize the formation of $NO_x$. |
| 2-2.5-2(b)(1)(H) | PCP is a pollution prevention project that IDEM has determined to be environmentally beneficial. | The intent of the modification is to prevent the formation of $NO_x$, instead of installing $NO_x$ control. |
| 2-2.5-2(b)(2) & 2-2.1-1(13) | PCP does not include the replacement of an existing emission unit with a newer or different unit. | There will be no construction of new emitting unit in this proposed modification. The proposed modification is to modify 2 existing units to add or modify valves and nozzles to optimize in-cylinder mixing of the air and natural gas fuel, resulting in lower NOx levels. |
| 2-2.5(d)(1) | Types and quantity of air pollutants emitted before and after the project. | See Tables 1, 2 and 3. |
| 2-2.5(d)(2) | Increase in pollutants other than those targeted in the project shall be reviewed, has to be minimized and does not result in environmental harm | CO emissions increase has been evaluated and does not cause an environmental harm or a violation of the NAAQS or PSD increment. |
| 2-2.5(d)(3) | Result in an unacceptable increase risk due to the release of air toxics is not environmentally beneficial. | There is no expected increase in the PTE of HAPs. |
| 2-2.5(b) | A PCP that causes a significant net emission increase pursuant to 326 IAC 2-2 must be approved by US EPA under the SIP prior to beginning actual construction. | See Table 4 . The net emission increase (based on the PTE-Past actual methodology) is significant because it is more than the PSD significant levels therefore, this PCP is required to be submitted as SIP to US EPA. The OAQ will take care of the SIP submission to EPA Region 5. |
| 2-2.5(b) | To obtain an approval for a PCP, the applicant shall submit a SSM application. | ANR Pipeline Co. - Shelbyville Compressor Station submitted a SSM application on January 15, 2003. |
| | Cross Media Evaluation | There is no need to perform a cross media evaluation. |
| | Cause and Contribute Test | This source is located in an attainment status, therefore, this test does not apply. |
| Conclusion | Based on the evaluations and fulfillment of the PCP criteria, this proposed modification is considered a PCP. | |

**Justification for Modification**

(A) Significant Source Modification (SSM)
The source is being modified through a Part 70 Significant Source Modification (SSM).

(1) Pursuant to 326 IAC 2-7-10.5(f)(4)(D), a modification with PTE greater than 25 tons/year shall be processed as SSM.

(2) Pursuant to 326 IAC 2-7-10.5(f)(8) and (f)(9), PCP is to be process as a SSM.

(3) 326 IAC 2-2.5(b) also confirms that a PCP is an application to be process as a SSM.

The recently published federal NSR revision confirms that PCP exclusion does not exempt the proposed modification from state permitting requirement. US EPA indicated that upon submission of the PCP exclusion notice to the state permitting agency, construction may start immediately, however, at this time, IDEM requires that PCP has to be process as SSM, thus the construction may not start until a modification approval has been issued.

(B) Significant Permit Modification (SPM)
Pursuant to 326 IAC 2-7-12(d), a significant permit modification is required because the proposed modification to the Part 70 permit involves a case by case determination of an emission limit or other standard and involves significant changes to existing monitoring, reporting or record keeping.

(C) $NO_x$ SIP Call
ANR indicated that the main purpose of the modification is to comply in advance with the NOx SIP call consistent with EPA's August 22, 2002 memorandum. IDEM acknowledges the EPA's August 22, 2002 memorandum indicating that such early reductions "from a large IC engine may be considered credit towards meeting the NOx SIP call requirements. Creditable reductions may include emissions controls in place during or prior to 1995 as well as after 1995 for the large engines. The applicable control requirements must be adopted as part of the SIP and must yield enforceable and demonstrable reductions".

The SSM and SPM approval that is going to be proposed and finalized is intended only to satisfy the construction and operating Part 70 program. This review does not deal with the evaluation if this control and or the $NO_x$ reductions are adequate or not in terms of Indiana's final NOx SIP requirements for IC engines.

**Enforcement Issue**

There are no enforcement actions pending on this source.

**Source Status**

(A) Major PSD status
Pursuant to 40 CFR Part 52.21(b) and 326 IAC 2-2-1(y), this existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of 250 tons per year or more. It is not one of the 28 listed source categories.

(B) Part 70 status
The Part 70 permit for ANR Pipeline Co. - Shelbyville Compressor Station (identified as 145-6240-00011), was issued on October 8, 1998.

**County Attainment Status**

The source is located in Shelby County. Table 6 shows the attainment status of Shelby County.

**Table 6 - - Shelby County**

| Pollutant | Status |
|---|---|
| $PM_{10}$ | Attainment |
| $SO_2$ | Attainment |
| $NO_2$ | Attainment |
| Ozone | Attainment |
| CO | Attainment |
| Lead | Attainment |

(1) Volatile organic compounds (VOC) and Ozone

VOC are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Shelby County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(2) Criteria Pollutants

Shelby County has been classified as attainment or unclassifiable for all the other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(3) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 40 CFR Part 52.21(b)(i)(c)(iii)(s) and 326 IAC 2-2-1(y) and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

**Federal Rule Applicability**

(1) New Source Performance Standards (NSPS)

There are no NSPS (326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.

(2) National Emission Standards for Hazardous Air Pollutants (NESHAP)

There are no NESHAP (326 IAC 14, 40 CFR Part 61, and and 40 CFR Part 63) applicable to this proposed modification.

At this time, the NESHAP for Internal combustion engines is at the proposal stage.

(3) Section 112(j) of the Clean Air Act (CAA)

(a) The requirements of Section 112(j) of the Clean Air Act (40 CFR Part 63.50 through 63.56) are applicable to this source because the source is a major source of HAPs (i.e., the source has the potential to emit 10 tons per year or greater of a single HAP or 25 tons per year or greater of a combination of HAPs) and the source includes one or more units that belong to one or more source categories affected by the Section 112(j) Maximum Achievable Control Technology (MACT) Hammer date of May 15, 2002.

(1) This rule requires the source to:

(A) Submit a Part 1 MACT Application by May 15, 2002; and

(B) Submit a Part 2 MACT Application within twenty-four (24) months after the Permittee submitted a Part 1 MACT Application.

(2) The Permittee submitted a Part 1 MACT Application on May 2, 2002. Therefore, the Permittee is required to submit the Part 2 MACT Application on or before May 2, 2004.

Note that on April 25, 2002, Earthjustice filed a lawsuit against the US EPA regarding the April 5, 2002 revisions to the rules implementing Section 112(j) of the Clean Air Act. In particular, Earthjustice challenged the US EPA's 24-month period between the Part 1 and Part 2 MACT Application due dates. The U.S. EPA and Earthjustice filed a settlement agreement on November 26, 2002. Proposed rule amendments based on this settlement agreement were published in the December 9, 2002 *Federal Register*. It appears that U.S. EPA intends to establish a phased schedule for promulgating all of the remaining MACT standards, resulting in four Part 2 MACT Application deadlines. Under the proposed amendments, some Part 2 MACT Applications would be due as early as May 15, 2003. Part 2 MACT applications for IC engines are due by February 2004.

(3) Pursuant to 40 CFR 63.56(a), the Permittee shall comply with an applicable promulgated MACT standard in accordance with the schedule provided in the MACT standard if the MACT standard is promulgated prior to the Part 2 MACT Application deadline or prior to the issuance of permit with a case-by-case Section 112(j) MACT determination. The MACT requirements include the applicable General Provisions requirements of 40 CFR 63, Subpart A. Pursuant to 40 CFR 63.9(b), the Permittee shall submit an initial notification not later than 120 days after the effective date of the MACT, unless the MACT specifies otherwise. The MACT and the General Provisions of 40 CFR 63, Subpart A will become new applicable requirements, as defined by 326 IAC 2-7-1(6), that must be incorporated into the Part 70 permit. After IDEM, OAQ receives the initial notification, any of the following will occur:

(A) If three or more years remain on the Part 70 permit term at the time the MACT is promulgated, IDEM, OAQ will notify the source that IDEM, OAQ will reopen the permit to include the MACT requirements pursuant

to 326 IAC 2-7-9; or

(B) If less than three years remain on the Part 70 permit term at the time the MACT is promulgated, the Permittee must include information regarding the MACT in the renewal application, including the information required in 326 IAC 2-7-4(c); or

(C) The Permittee may submit an application for a significant permit modification under 326 IAC 2-7-12 to incorporate the MACT requirements. The application may include information regarding which portions of the MACT are applicable to the emission units at the source and which compliance options will be followed.

Based on the Section 112(j) Part 2 MACT application requirement, the following condition will be added to the Part 70 permit (145-6240-00011) though the SPM 145-16700-00011.

**C.22 Application Requirements for Section 112(j) of the Clean Air Act [40 CFR 63.52(e)] [40 CFR 63.56(a)] [40 CFR 63.9(b)] [326 IAC 2-7-12]**

**(a) The Permittee shall submit a Part 2 MACT Application in accordance with 40 CFR 63.52(e)(1). The Part 2 MACT Application shall meet the requirements of 40 CFR 63.53(b).**

**(b) Notwithstanding paragraph (a), the Permittee is not required to submit a Part 2 MACT Application if the Permittee no longer meets the applicability criteria of 40 CFR 63.50 by the application deadline in 40 CFR 63.52(e)(1). For example, the Permittee would not have to submit a Part 2 MACT Application if, by the application deadline:**

**(1) The source is no longer a major source of hazardous air pollutants, as defined in 40 CFR 63.2;**

**(2) The MACT standard or standards for the affected source categories included at the source are promulgated.**

**(c) Notwithstanding paragraph (a), pursuant to 40 CFR 63.56(a), the Permittee shall comply with an applicable promulgated MACT standard in accordance with the schedule provided in the MACT standard if the MACT standard is promulgated prior to the Part 2 MACT Application deadline or prior to the issuance of permit with a case-by-case Section 112(j) MACT determination. The MACT requirements include the applicable General Provisions requirements of 40 CFR 63, Subpart A. Pursuant to 40 CFR 63.9(b), the Permittee shall submit an initial notification not later than 120 days after the effective date of the MACT, unless the MACT specifies otherwise. The initial notification shall be submitted to:**

**Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015**

**and**
**United States Environmental Protection Agency, Region V**
**Director, Air and Radiation Division**
**77 West Jackson Boulevard**
**Chicago, Illinois 60604-3590**

(4) Prevention of Significant Deterioration (PSD) 40 CFR 52.21

This proposed modification is not subject to PSD review and requirements because of the PCP exclusion and supplemented by the fact that the net emission increase does not cause a violation of the NAAQS and PSD increment.

(5) Compliance Assurance Monitoring (CAM) 40 CFR Part 64

These IC engines have greater than the Part 70 major source level, however, they do not have control, thus pursuant to 40 CFR 64.2(a), CAM does not apply.

**State Rule Applicability - Individual Facilities**

(1) 326 IAC 2-2 PSD

This modification to this existing major stationary source is not major because pursuant to 326 IAC 2-2.5 (1)(a), PCP at an existing source shall not constitute a major modification under 326 IAC 2-2-1(x). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

(2) There are no additional state rules due to this proposed modification.

**Air Quality Impact Analysis**

Pursuant to 326 IAC 2-2.5(e), IDEM may request the applicant to submit an air quality impact analysis of the criteria pollutant net emissions increase of the PCP. The OAQ did not require the applicant to submit an air impact analysis because:

(1) The PTE after the PCP is expected to be less than the PTE before the PCP.

(2) The source is located in an attainment area.

(3) The source is not within the 50 mile radius of a Federal Class I area.

On February 3, 2003, the OAQ performed the air quality analysis for NOx and CO for the expected PTE after the PCP. The results show no significant impact to the national ambient air quality standards.

No air quality modeling is necessary for HAPs because there is no expected increase in HAPs PTE.

**Testing Requirements**

These two (2) IC engines have not been tested. Since the federal NSR reforms have already established that this type of fuel is considered as automatically environmentally beneficial project, no additional compliance testing will be required to confirm the reduction in NOx emissions at this time.

ANR has indicated the intent of this project is to ensure early compliance reductions with future NOx SIP rules for IC engines. ANR predicts a net NOx reductions of 1.97 tons/day from the 1995 baseline. Pursuant to EPA guidance, such controls must be adopted as part of the SIP and must yield enforceable and demonstrable reductions. Once IDEM finalizes the IC engine NOx SIP rule, ANR will be required to conduct an initial performance test on these engines for NOx using approved testing methods to demonstrate the actual reductions realized by installation of these combustion modification technologies and to ensure that these reductions are federally enforceable.

**Compliance Requirements**

No additional compliance monitoring has been changed or relaxed due to this proposed modification.

**Proposed Permit Conditions**

The following proposed changes will be incorporated to the Permittee's existing Part 70 permit (145-6240-00011). Proposed changes are in bold or strikeout for emphasis.

(A) The descriptions of the 2 units in Sections A.2 and D.1 are revised as follows to incorporate the change in fuel mixture:

(3) One (1) natural gas fueled **2 cycle lean burn** reciprocating internal combustion ~~internal~~ engine compressor, installed in 1968, identified as ID # E08, with a rated capacity of 7830 Horsepower, and exhausting to stack # S08.

(4) One (1) natural gas fueled **2 cycle lean burn** reciprocating internal combustion ~~internal~~ engine compressor, installed in 1970, identified as ID # E09, with a rated capacity of 11000 Horsepower, and exhausting to stack # S09.

**A new electronic fuel injection system (valves and nozzles) is incorporated to the existing fuel injection of E08 and E09. The new electronic injection system, is designed to optimize in-cylinder mixing of air and natural gas fuel. The optimized mixing of the fuel and air is realized by injecting fuel gas into the combustion chamber at an increase pressure, thus creating a more turbulent environment resulting in a homogeneous mixture. This homogeneous mixture results in a more complete combustion and eliminates fuel rich regions that disproportionately contribute to NOx formation and allows combustion to happen with a lean fuel/air mixture which raises the heat capacity of the mixture. Fuel lean operations result in lower NOx emissions because peak temperatures are reduced during the combustion process.**

**Lean denotes a paucity of fuel, or an excess of oxidant, (e.g. air). In this case, excess air serves primarily as thermal ballast, keeping the temperature from soaring to levels where rapid $NO_x$ formation occurs.**

(B) The following condition is added to show the PCP project: Preceding conditions have been renumbered and the Table of Contents has been updated.

**D.1.2 Pollution Control Project [326 IAC 2-2.5]**

**(a) The Permittee shall install combustion modification controls on E08 and E09 such that each engine does not emit more than the following rates:**

| Pollutant | Emission Rate (lb/hr) | |
|---|---|---|
| | E08 | E09 |
| CO | 46.61 | 65.48 |
| NOx | 113.93 | 194.00 |

**(b) Pursuant to 326 IAC 2-2.5, this combustion modification technology is considered a pollution control project (PCP), thus it is excluded from the 40 CFR 52.21 and 326 IAC 2-2 PSD requirements.**

## Recommendation

Based on the facts, conditions and evaluations made, OAQ recommends to the IDEM Commissioner that the Part 70 Significant Source Modification (SSM), Part 70 Significant Permit Modification (SPM) and pollution control project (PCP) be approved made available to the public and interested parties for review.

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on January 15, 2003 with additional information received on February 4, 2003 and February 7, 2003.

In addition to the air pollution control requirements, the applicant has fulfilled the following administrative requirements:

(1) The applicant has provided a copy of the application to the Shelbyville-Shelby County Library, 57 West Broadway, Shelbyville, IN 46176 on January 14, 2003.

(2) The applicant indicated that the following government officials should be notified of this proposed modification:
(a) Mayor of Shelbyville
(b) Shelbyville Common Council and
(c) Shelby County Commissioner

## Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 SSM and PCP Permit No. 145-16668-00011.

The operation of this proposed modification shall be subject to the conditions of the attached proposed Part 70 SPM and PCP Permit No. 145-16700-00011.